

APP



## REPLY BRIEF

**FOR APPLICATION SERIAL NO. 10/621,155**

**TITLE:**  
**RIGID RADOME WITH POLYESTER-POLYARYLATE FIBERS**  
**AND A METHOD OF MAKING SAME**

Applicants: Fredberg et al.  
Filed: July 16, 2003  
Examiner: Michael C. Wimer  
Group: 2828  
Docket No.: RAY-133J



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## I. ARGUMENT

The applicant claims a radome made of polyester-polyarylate fibers in a resin matrix.

*Coffy* teaches a general purpose composite including fibers made of the same material as the matrix (LCP) for chemical compatibility. See *Coffy*, Col. 1, lines 65 – Col. 2, line 15. The composite is stated to be useful “in numerous industrial fields”, *Coffy*, Col. 1, lines 24-29, and exhibits transparency to electromagnetic waves as well as providing fire resistance and thermal insulation. See *Coffy*, Col. 7, lines 3-5. Because the composite material is transparent to electromagnetic waves, it can be exposed to radiation without decomposing. *Coffy*, Col. 3, lines 27-30.

Presumably, those skilled in the art knew about this composite material, its potential “industrial” uses, and its other potential benefits on November 1, 1994 – the date of the *Coffy* patent.

But, to our knowledge, no one skilled in the art other than the applicants have used that material or any similar material to construct a radome. Perhaps it is because *Coffy* insists the matrix and fiber material must be the same and such a requirement is not needed or even desired in radome construction. Perhaps it is because *Coffy* is too general regarding the intended uses of the material disclosed. Perhaps it is because *Coffy* is interested in resisting decomposition in the face of electromagnetic waves; not reducing radio frequency losses in order to allow radio waves to reach the radar equipment housed by a radome – the Holy Grail of radome design.

We do not, however, know the *real* reason no one other than the applicant has used a material with polyester-polyarylate fibers in a resin matrix in radome construction, but the reason doesn’t matter. Why? Because its legally improper to combine *Coffy*’s teaching with *Greene* when a) *Greene* considered polyarylate material for use in a radome and rejected it over polycarbonate material believing polyarylate material was unable to meet electrical, rain impact

and load requirements (*Greene*, Col. 4, lines 6-16) and b) *Greene* achieves the desired transmission properties by designing the polycarbonate core of the radome appropriately; not by choosing any particular skin material (*Greene*, Col. 4, lines 17-35). *Greene* never suggests polyester-polyarylate fibers in a resin matrix for use in radome construction to reduce radio transmission losses.

If *Greene* doesn't prefer polyarylate material generally, how can *Greene* suggest polyarylate fibers in a resin matrix? If *Greene* doesn't prefer polyarylate material generally, how can *Greene* suggest polyarylate fibers in a resin matrix to reduce radio transmission losses?

The clear answer is *Greene* cannot. As we've stated before, *Greene* teaches away from using the material of *Coffy* in radome design.

Thus, the §103 rejection wherein *Greene* is combined with *Coffy* is improper.

## II. Conclusion

Accordingly, the applicants' respectfully request that the Board find that claims 1-24 are in condition for allowance.

Respectfully submitted,



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